IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 2, July 2022
Impact Factor: 6.252

A Smart Helmet for Improving Safety in Mining Industry

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Abstract: *A smart helmet has been developed which includes various features such as the two-way communication, detection of the hazardous gases, providing notification in the case of helmet removal, collision (miners are struck by an object), panic switch for emergency situations, continuous monitoring of the environmental conditions such as temperature and pressure in the mining industry and GPS is provided to track the location of the miner. Once the poisonous gas is detected the helmet opening gets closed and the oxygen supply is provided within the helmet for the miners by the opening of solenoid valve of the oxygen cylinder. Panic switch is provided for the safety of the miners and it is used to provide alert signal to the control room during any emergency situations. Temperature and Pressure sensors are used for the continuous monitoring of environmental conditions. The information is sent to the control room through wireless network. The layout of the visualization was completed and displayed in the control room with the help of a Lab VIEW software. This paper presents the undertaken design detailing solutions to issues raised in previous research.*

Keywords: Mining, Environmental Condition, Collision, Hazardous Gases

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